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The effects of the Family Stress Model on child mental heatlh

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by

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ABSTRACT

According to recent U.S. Census data, 46.2 million Americans live in poverty (Census, 2010). Research indicates that economic hardship has an adverse effect on the well-being of parents and children. The Family Stress Model posits that economic hardship within the family leads to certain economic pressures. These economic pressures lead to an increase in parental emotional distress, which can cause a strain on the marital relationship. This, in turn, leads to low nurturing and uninvolved parenting which disrupts developmental outcomes for children and adolescents (Conger, Conger, & Elder Jr., 1997). The present investigation utilized data from the Family Transitions project in order to examine the effects of the Family Stress Model on five specific childhood mental health disorders which include: Attention-Deficit/Hyperactivity Disorder, Conduct Disorder, Depressive Disorder, Generalized Anxiety Disorder, and Obsessive-Compulsive Disorder. Results indicate that the pathways of the Family Stress Model as experienced when children were in early childhood predicted child mental health disorders when these same children were in late childhood. These findings are important as they contribute to our understanding of the effects that living in economically difficult times have on later childhood development.

CHAPTER 1. INTRODUCTION

In 2009, the poverty rate in the United States was 14.3 percent and the rate has since increased to 15.1 percent (US Census Bureau, 2010). In fact, the poverty rate in the U.S. has been on the incline since 2007 when the rate was at 12.5 percent. More specifically, 46.2 million people live in poverty which is the largest it has been since poverty data was first collected 52 years ago. Poverty is defined by the number and age of the individuals living in a household. For example, a family of four (e.g., two parents and two children) would be considered as living in poverty if their household income is under $22,314 (Census, 2010). Extensive research indicates that family economic hardship has an adverse effect on the well-being of parents and children. Specifically, the Family Stress Model (Conger & Conger, 2002) proposes that economic hardship or economic disparity leads to economic pressure, which is defined as the perceived inability to pay for basic needs, the inability to make ends meet, and having to cut back on necessary expenses. The model predicts that when economic pressure is high, parents are at an increased risk for emotional distress, such as anxiety and/or depression which, in turn, leads to disrupted family relationships. That is, parental emotional distress leads to an increase in martial conflict, which leads to an increase in harsh or inconsistent parenting. These harsh parenting practices result in increases in child internalizing and externalizing behaviors. Therefore, the consequences of economic problems threaten the well-being of children.

Studies show that children growing up in this type of environment are at risk for poor outcomes, such as an increased risk of behavioral problems (Evans, 2002), a decrease in social competence (Bolger, Patterson, Thompson, & Kupersmidt, 1995), and

lower cognitive outcomes (Gershoff, Aber, Raver, & Lennon, 2007). Indeed, some studies show that young children are especially sensitive to the effects of economic adversity (Dearing, McCartney, & Taylor, 2001), while others find that children in middle childhood or adolescence are most vulnerable to economic disparity (Sobolewski & Amato, 2005).

Studies examining economic hardship early in life have shown that young children are most affected in the areas of cognitive development and school performance compared to those exposed later in childhood. Brooks-Gunn and Duncan (1997) found that children experiencing poverty during the preschool and early school years have higher levels of non-school completion than those children who experience poverty at an older age. One reason may be that early childhood is a sensitive period for the development of language. Disruption in parenting due to economic hardship during this period may interfere with the development of vocabulary necessary for school readiness. For example, parents may not be able to afford the necessary resources for their child's learning such as toys, books, and computers. Studies have shown that parental investments in child learning mediate the association between family economic hardship and child cognitive development (Gershoff et al., 2007). Therefore, it appears that lower family income during early childhood disrupts effective parenting in terms of promoting cognitive development at a time when it is crucial for successful academic performance.

Although many studies have examined the effects of economic hardship on early childhood in terms of cognitive development, it is also important to examine how this impacts individuals during the adolescent years. Research shows there is an increased risk for social and emotional problems. For example, Conger and colleagues (2002)

found that parents lack the skillful parenting needed during adolescence. Specifically, they found that economic pressure led to an increase in parent emotional distress, which then caused changes in the parent-child relationship. This increase in parental emotional distress led to decreases in nurturant parenting. Decreased levels of parenting led to an increase in adolescent internalizing and externalizing problems. Therefore, economic pressure led to higher levels of parental depression and increases in youth problem behavior (Conger et al., 2002).

Similarly, Zill and Schoenborn (1990) examined 5 to 18 year-old children as part of the 1988 National Health Interview Survey of Child Health. Parents were asked if their child had an emotional or behavioral problem in the past three months. Parental income was also examined to ascertain if there was a direct effect between poverty and child mental health. Results indicated that children had more emotional and behavioral problems if the family was living in poverty. That is, 16.4 percent of families living below the poverty level reported that their child had an emotional or behavioral problem, compared to 12 percent of children living above the poverty level. Finally, Sobeski and Amato (2005) found that adolescents living in poor economic conditions had lower self-esteem, higher distress, and lower levels of happiness. Thus, adolescents are especially vulnerable to the development of social and emotional problems when their families are facing economic difficulty.

Taken together, these studies show that economic hardship may affect children differently based on their developmental stage of life. The current proposal is in a unique position to contribute to this literature by examining the effects of economic pressure from early childhood through pre-adolescence. Specifically, we will investigate the

impact of economic pressure, measured when the adolescent was a young child, on later socio-emotional development during middle childhood. Indeed, there is little research that has examined the effects of economic hardship as experienced early in life on later socio-emotional development. Based on the pathways of the Family Stress Model (Conger & Conger, 2002), it is expected that when economic pressure is high, there will be an increase in parental emotional stress, which will disrupt both marital and parent-child relationships. These disruptions will affect the child's social and emotional development, specifically mental health, during middle childhood.

CHAPTER 2. LITERATURE REVIEW

The Family Stress Model

The United States has recently seen an increase in the number of families living in poor economic environments. For these families, consequences include slow economic growth, loss of income or low-skill jobs that have higher wages, loss of government benefits for children, and an increase of children living with single mothers (McLoyd, 1998). Indeed, the rate of Americans living in poverty today is the highest it has been since poverty data collection started 52 years ago (US Census Bureau, 2010). Growing up in an economically disadvantaged household places both parents and children at risk for multiple disadvantages. As such, the Family Stress Model focuses on how economic disadvantage is associated with developmental difficulties for both children and adults. It posits that economic hardship within the family leads to certain economic pressures. These pressures lead to parental emotional distress such as increased anxiety or depression which can cause a strain on the marital relationship. This, in turn, leads to low nurturant parenting which disrupts developmental outcomes for children and adolescents (Conger et al., 1990).

Consistent with this model, Skinner, Elder Jr., and Conger (1992) proposed three different types of economic hardships. The first was income-to-needs, which is the current financial status of the family. This ratio "adjusts total income by the amount of money estimated to keep a family of a given size out of poverty" (Skinner et al., 1992, p. 262-273). This assesses whether the current financial state of the family is enough to keep the family out of the poverty range. The second hardship was income change, which encompasses both short and long-term income. This is especially true when income

change is in a negative way (e.g., a parent is losing income). Although some research has focused solely on the consequences of unemployment, research conducted by Skinner and colleagues (1992) emphasized that a change in breadwinner status may cause negative feelings and frustration within the family. The last type of economic hardship included hardship adaptation, which is the family's inability to adjust to economic hardships in an appropriate manner. In other words, instead of seeking out government assistantship programs or other means of financial stability, families continue down the pathway of economic problems. Any one of these different types of economic hardships can lead to economic pressure which is defined as unmet material needs such as adequate food and clothing, the inability to pay bills or make ends meet, and having to make significant cutbacks in daily expenditures because of limited resources (Conger & Conger, 2002). Figure 1 illustrates how economic pressure, which can be experienced at any socioeconomic status, experienced within the family influences the depressive mood of parents which may lead to relationship conflict. The impact of depression, along with a distressed marital relationship, contributes to decreases in effective parenting. This decrease in nurturant-involved parenting influences child adjustment. The next section of this proposal will focus on the impact of economic pressure on child maladjustment and the pathways of the Family Stress Model which contribute to that process.

Economic Pressure and Child Mental Health

Studies have shown that economic pressure significantly impacts the development of children. For example, economic disadvantage may disrupt socio-emotional development, which may lead to an increase in behavioral issues such as conduct disorder and depression. Samaan (2000) found that children who were living in economic

disparity were more likely to have a mental health disorder than those children not living in disparity. Even more so, these children were more at risk for any mental health disorder and the symptoms of the disorder intensified as the level of economic disparity increased over time (Samaan, 2000).

Similarly, McLeod and Shanahan (1996) examined data collected from the National Longitudinal Survey of Youth (NLSY) and also found that children living in poor economic conditions were more likely to have mental health problems. Specifically, economically deprived children had higher levels of antisocial behaviors and depression and showed an "accelerating behavioral disadvantage" (p. 207) over children living in non-poverty conditions. In other words, children experiencing economic hardships were more likely to have behavioral disadvantages when compared to their peers not living in hardship. Finally, it was also found that time played a factor in that children with a consistent history of living in poverty were more likely to have mental health problems than those who were only living in poverty for a short amount of time (McLeod & Shanahan, 1996). These results are important in terms of understanding why living in poor economic conditions at a young age may be more harmful than experiencing these conditions later on in life, when more life skills have been developed and coping strategies can be learned.

Kim and colleagues (2003) investigated the relationship between stressful life events (which included living in a poor economic environment) and youth outcomes. They found that youth experiencing more negative life events displayed higher levels of depression and anxious mood than those living with a fewer number of life events. In addition, it was found that negative life events predicted an increase in depression and

anxiety in later years. Lastly, after controlling for previous delinquent behaviors, stressful life events were positively related to delinquent behaviors (Kim et al., 2003).

Economic Pressure and the Family

Studies show that parents may play a key role in how economic stress impacts the family. Indeed, the Family Stress Model proposes that economic pressure increases parental emotional distress which causes a strain on both marital and parental relationships. According to the Family Stress Model, parental emotional distress can be defined in terms of an increase level of anxiety and/or depression (Conger et al., 2002). The following sections will describe the various influences of economic pressure within the model.

Economic Pressure, Parental Emotional Distress, and Child Outcomes

Conger and colleagues (2002) found that economic pressure increased parental depressed mood. Studies have shown that parental depressive mood leads to negative consequences for children. For example, Olfson and colleagues (2003) found that children of parents with depression were 2.8 times more likely to suffer from mental health problems. More specifically, Reeb and Conger (2009) found a direct link between parental depression and adolescent depression. In other words, parents exhibiting behaviors related to depression were more likely to have adolescents who also displayed depressive behaviors (Reeb & Conger, 2009). Weissman and colleagues (2006) examined data from a 20-year prospective study and found that children were three times more likely to develop major depression, anxiety disorders, and substance abuse if their parents were depressed. Similarly, McClure (2001) examined 15 year-old adolescents and parents with and without anxiety disorders. Adolescents of mothers with anxiety disorders were

more likely to also have anxiety disorders while paternal anxiety yielded no significant results.

Cox and colleagues (2006) found that depressed mothers had children with more emotional and behavioral concerns. Weissmann and colleagues (1987) found similar results in that children of depressed parents were more likely to have major depression, problems in school, and substance abuse issues. Taken together, these studies illustrate that economic pressure impacts parental psychological health, which has negative consequences for their children.

Economic Pressure, Parental Emotional Distress, and Romantic Relationships

Increased parental emotional distress may increase negativity between parents in their marital relationship. Indeed, Conger and colleagues (2002) found that economic pressure increased parental emotional distress, which led to a hostile marital relationship. Hostile behaviors included angry responses such as criticism, defensiveness, and insensitivity, as well as withdrawal of supportive behaviors (Conger et al., 2002).

Conger and colleagues (1990) also found that economic pressure within the family influenced the husband's marital interactions indirectly through a perceived lack of resources. In other words, the inability of the husband to provide the family with perceived needs led to an increase in his hostile behavior toward his wife. In addition, wives reported higher levels of martial instability and lower levels of marital satisfaction. Alternatively, there was no evidence that economic strain caused more hostile behaviors by the wives to their husbands but rather indirectly through the husband's hostile behaviors (Conger et al., 1990).

These studies help support earlier work which showed that when there is positive socioeconomic standing within the family, parents report higher marital quality (Piotrkowsi, Rapoport, & Rapoport, 1987). Similarly, when examining the marital relationship from parents during the Great Depression, Liker and Elder (1983) found that for families experiencing economic disparity, the husband's behavior was explosive and irritable towards his spouse. These negative behaviors caused marital tension and conflict within the relationship.

Economic Pressure, Parental Emotional Distress, Parenting, and Child Outcomes

According to the Family Stress Model, economic pressure influences the emotional state of the parent, which leads to marital conflict and altered parenting practices by reducing the level of warmth and involvement with their child. That is, parents who are distressed and experiencing conflict within their relationship may be more inconsistent and have harsher interactions with their child. Repetti, Taylor, and Seeman (2002) described parents that display physical, emotional, and verbal aggression towards the other parent as well as the child as "risky families." The authors described these parents as "cold, unsupportive, and neglectful" (p. 332).

When examining differences between mother and father reactions to living with economic pressure, Martin and colleagues (2010) found differences in the coping strategies used by parents. When economic pressure is present, the division of labor is changed, creating a higher level of stress for the parents. For example, mothers in general are responsible for maintaining balance and harmony in the home. When this is changed, the mother-child relationship also changes which, in turn, causes more behavioral problems in children. Alternatively, fathers who are less able to support their families

financially have feelings of incompetency, which leads to their negative parenting (Martin et al., 2010).

In another study, McLoyd (1998) explored the influence of poverty on parents' strategies for handling discipline with their children. It was found that parents experiencing economic hardship used inconsistent (i.e., different punishments for the same behavior, lack of a punishment for the same behavior) and harsher punishment. Even more so, parents living in adverse economic conditions ignored the physical and emotional needs of their children (McLoyd, 1998). Similarly, McLeod and Shanahan (1993) investigated parenting styles of parents living in poverty and found that mothers displayed an emotional responsiveness that was weak compared to mothers living in non-poverty environments. It was also found that mothers living in poverty demonstrated a higher level of physical punishment with their children. Specifically, mothers living in poverty were more likely to use "power-assertive techniques" (McLeon & Shanahan, 1993, p. 322), which was more likely to lead to physical abuse towards their children. These mothers were also less likely to show supportiveness, meaning they were less nurturing and attentive to their children's needs and wants. Several studies have shown this type of harsh parenting leads to negative consequences for children and adolescents. For example, Kim and colleagues (2003) divided families into two types of parenting: nurturant-involved and harsh-inconsistent. Youth who experienced parents with harsh-inconsistent parenting styles reported more harshness from the parent. This, in turn, led to an increase in adolescent conduct problems.

The impact of harsh parenting on childhood behavioral problems was further examined by Stormshak, Bierman, McMahon, and Lengua (2000). Parents of 631

children with behavioral problems were interviewed on their warmth and support towards their children. Results showed that there was a positive relationship between parent-child punishment and child problem behavior. In other words, if parents used harsher forms of punishment, their child was more likely to have an increase in aggression, opposition, and hyperactivity. In addition to punitive interactions, even the lack of parental warmth and support led to higher levels of child behavioral problems.

Research has also focused on the long term effects of hostile parenting on child behavioral outcomes. Ge, Best, Conger, and Simons (1996) found that youth in seventh, eighth, and ninth grade that had hostile parents were more likely to have both depressive symptoms and conduct problems by the time they were in tenth grade. Finally, Neppl, Conger, Scarmella, and Ontai (2009) examined the effects of harsh parenting on child behaviors in the later years. It was shown that harsh parenting during adolescence led to increased externalizing behaviors by the child during early adulthood. Taken together, these studies show how economic adversity influences the quality of parenting, which can directly affect child and adolescent behavioral outcomes.

Present Investigation

The present study investigated the pathways consistent with the Family Stress Model. Specifically, economic disparity in the family, parental emotional distress, marital conflict, and hostile parenting was assessed when the child was between the ages of three and five years old. The impact of these pathways on child mental health was assessed when that same child was between the ages of six and eleven years old (see Figure 2). The present investigation focused on five child mental health disorders: Attention-Deficit/Hyperactivity Disorder (ADHD), Conduct Disorder, Depressive Disorder,

Generalized Anxiety Disorder (GAD), and Oppositional-Defiant Disorder (ODD). These mental health disorders follow the definitions of the American Psychiatric Association's DSM-IV-TR (APA, 2000). According to the APA, ADHD is a disorder in which the individual has inattention, hyperactivity, and impulsivity that is maladaptive and inconsistent with the child's level of development. Conduct Disorder, specific to children, is defined as misbehaving in aggressive and nonaggressive manners against people, animals and/or property. The APA defines Depressive Disorder as a lack of interest and pleasure in daily activities. Individuals suffering from Depressive Disorder, overall, have feelings of sadness, worthlessness and fatigue. People with GAD find it difficult to control their worrying and their anxiety is persistent and excessive. Finally, ODD, specific to children, is when the child's behaviors do not meet the criteria for Conduct Disorder, but follow a pattern of defiance and hostility. Furthermore, it is defined as a pattern of disruptive behaviors that include throwing tantrums, being angry, and displaying little to no respect towards authority figures (APA, 2000). It is important to understand that many of these disorders use symptoms as diagnoses tools and an individual must show many of the symptoms for a certain amount of time, all of which are defined in the DSM-IV-TR.

The present study is in the unique position to examine the pathways of the Family Stress Model from early to middle childhood. Based on previous findings (Conger & Conger, 2002), it is hypothesized that parents experiencing economic pressure will show higher levels of emotional distress, which will lead to an increase in martial conflict, and an increase in hostile parenting. In turn, this increase in marital conflict and hostile parenting toward their young child will lead to an increase in mental health problems

when their child reaches early adolescence. True to the model, it is expected that marital conflict will lead to harsh parenting, which will lead to child mental health problems. It is not expected that marital conflict will directly influence child mental health, but rather it will be an indirect effect through parenting.

This study will add to the literature in this field in three main ways. First, the present investigation used data collected from multi-informants. For example, economic pressure, emotional distress, and child mental health were parent report. On the other hand, observational data were collected for both marital conflict and harsh parenting. Second, this investigation was prospective in that data collected when children were age three to five years was used to predict to the same child between the ages of six and eleven years old. Finally, much of previous research with the Family Stress Model has examined how economic pressure influences adolescent outcomes; therefore, this study will contribute to the literature by examining the effects of the model during middle childhood.

In order to ensure that any relationships found could be accounted for by social or background characteristics, the present investigation controlled for parent per capita income, age for both parent and child, and gender for parent and child. Previous research shows that these control variables may be related to parenting behaviors. For example, family income and socioeconomic status (SES) are both related to a number of factors including positive parenting, harsh parenting, and externalizing problems in adolescents (Conger & Donnellan, 2007; Conger & Simons, 1997).

Previous research investigating demographic characteristics such as age and gender has found that younger mothers have an increased chance of negative life

outcomes. In one study of children born to mothers who began their childbearing before 19 years of age, sons were more likely to experience externalizing problems and drug use. Moreover, girls born to these specific mothers had an increased risk for engaging in early parenthood similar to their mothers (Pogarsky, Thornberry, & Lizotte, 2006). In terms of child age, one study demonstrated that mothers with older boys compared to younger showed less effective parenting. The older sons also showed an increase in antisocial behavior (Bank, Forgatch, Patterson, & Fetrow, 1993). Lastly, Thornberry, Krohn, and Freeman-Gallant (2006) found that daughters compared to sons were more likely to model risky behaviors of their mothers during adulthood.

CHAPTER 3. METHOD

Participants

The current study used data from the Family Transitions Project (FTP), a longitudinal study across three generations. The FTP is an extension of two earlier studies: The Iowa Youth and Families Project (IYFP) and the Iowa Single Parent Project (ISPP). The IYFP originated in 1989 (N=451) when the target youth was in seventh grade. At that time, the target youth participated with their parents and a sibling within four years of the target adolescent. The families were originally recruited because they were living in an economically stressful environment in the rural Midwest. Participants were recruited from both private and public schools. Letters were sent to eligible families explaining the project. Interviewers then contacted the families via telephone and they were asked to participate in the project. For families that did not own a phone, researchers contacted the families in person. In 1989, parents of the target youth averaged 13 years of education and had a median family income of $33,700. The size of the participating families averaged from 4 to 13 members with an average size of 4.94 members.

The ISPP project began in 1991 when target adolescents were in 9^{th} grade (N = 108). The participants included the target adolescent, their single-parent mother, and a sibling within four years of the target adolescent. In 1994, the IYFP and ISPP were combined to form the Family Transitions Project (FTP). During this time, the target adolescents were in 12^{th} grade. Then, in 1995, the target adolescent participated in the study along with their romantic partner or friend. By 1997, the project included the first-born child of the target adolescent.

The present investigation included the target youth now grown to adulthood (N=227; 60.4 % female), their romantic partner, and their first born child who participated in the study prior to 2005. The target's romantic partner was either a spouse (N=158), cohabitating partner (N=35), or boy/girlfriend (N=11). Two time points were used in order to examine the pathways of the Family Stress Model. Time 1 included 227 children aged three to five years. There were a total of 186 3-year olds, 25 4-year olds, and 9 5-year olds. During time 1, there were 107 (47.1%) girls. Time 2 data included 125 children with ages ranging from 6 to 11 years old (53% boys). There were a total of 80 6-year olds, 50 7-year olds, 24 8-year olds, 13 9-year olds, and 1 11-year old. The analyses were limited to data from the first time the child participated in the study during each of the two time points.

Procedures

From 1997 through 2005, the target parent participated in the study with their romantic partner and first born child. They were visited by trained interviewers once a year in the families' homes. Parents were asked to fill out questionnaires addressing parenting and child characteristics, which included mental health. Questionnaires completed by the parents were appropriate for their child's developmental age. The target parent also completed questionnaires related to their own behavior and individual characteristics. In addition, each target parent participated in separate observed interaction tasks with both their romantic partner and their first born child.

The marital interaction task was designed to create a discussion between the couple about childrearing and family issues. The parent-child interaction task was designed to create a stressful environment to ascertain how parents handle these types of

stressors with their children during a structured puzzle task. In coding these interaction tasks, trained observers used the Iowa Family Interaction Rating Scales which have shown good reliability and validity (Melby et al., 1998). In order to assess inter-observer reliability, 25% of the tasks were coded by a second observer (reliability coder).

Measures

Economic Pressure. Economic pressure was assessed via target parent self-report. Parents were asked questions related to making ends meet, financial cut backs, and material needs. Making ends meet included two questions. The first question used a 5-point scale (1 = a great deal of difficulty to 5 = no difficulty at all) and asked parents, "During the past 12 months, how much difficulty have you had paying your bills?" The second question used a 4-point scale (1 = more than enough money left over to 4 = not enough to make ends meet) and asked parents to "Think again over the past 12 months, generally at the end of each month how much money did you end up with?" The first item was reversed coded and then both items were standardized and summed together.

Financial cutbacks included 28 yes-or-no questions to determine drastic measures and thrifty cutbacks for the family. Questions to determine drastic measures included whether or not the parent: "dropped plans for going to college", "postponed medical/dental care", and whether he or she had "taken bankruptcy." In order to determine thriftiness, questions asked whether the parent has, "taken an extra job or jobs to help meet expenses", "changed food shopping or eating habits to save money", and "purchased second-hand good rather than new".

Material needs (also known as felt constraints) were determined by asking parents to rate their agreement to six questions on a 5-point scale (1 = strongly agree to 5 =

strongly disagree). Parents responded to statements such as, “I have enough money to afford the kind of place to live in that I should have”, “I have enough money to afford the kind of medical care I should have”, “I have enough money to afford the kind of clothing I should have”, “I have enough money to afford the kind of furniture or household equipment I should have”, “I have enough money to afford the kind of car I need”, “I have enough money to afford the kind of food I should have”, and “I have enough money to afford the kind of medical care I should have”. Making ends meet, financial cutbacks, and material needs were used as separate indicators for the latent construct of economic pressure. Scores were analyzed in terms of the child’s age at first assessment (when they were three to five years old) between the years of 1997 and 2005. Coeffient alpha (α) was computed to estimate internal consistency. The individual alphas for material needs, cut backs, and ends meet were $\alpha = .89$, $\alpha = .83$, and $\alpha = .83$, respectively. The means, standard deviations, and minimum and maximum scores for all study variables are provided in Table 1.

Parental Emotional Distress. The SCL-R-90 (Derogatis, 1994) was used to assess parental emotional distress. Target parents were asked 35 questions in which they were to rate their frequency, over the past week, of distressed or bothered feelings on a 5-point scale (1 = not at all to 5 = extremely). Items from this measure make up three separate scales, which include: anxiety, depression, and hostility. These three measures were used as separate indicators for the latent construct of parental emotional distress.

Anxiety was defined as, “nervousness or shakiness inside”, “suddenly scared for no reason”, and “feeling fearful”. Specific items for depression asked parents if they were “feeling low in energy or slowed down”, had “feelings of worthlessness,” and had

"thoughts of ending [their] life". Finally, hostility was defined as "feeling easily annoyed or irritated", "temper outbursts that you could not control", and "having urges to break or smash things". Scores were analyzed in terms of the child's age at first assessment (when they were three to five years old) between the years of 1997 and 2005. The coefficient alpha for anxiety, depression, and hostility were $\alpha = .92$, $\alpha = .89$, and $\alpha = .82$ respectively.

Marital conflict. Observer ratings were used to assess marital conflict from a 25 minute discussion task between the target parent and his or her romantic partner. For this task, the couple was asked to discuss several questions from a series of cards in which one partner would read questions related to a topic on the card and express their answers out loud first. Then the other partner, not reading the card, would give their answers. The dyad was instructed to move on to the next card once they had said everything about each card that they deemed necessary. Topics of discussion included childrearing, employment, and characteristics of the relationships.

Three observational scales were used to assess specific behaviors related to martial conflict between the couple which included: hostility, antisocial behavior, and angry coerciveness. A 9-point scale was used in order to assess if the behaviors were on the low end (no evidence of behavior) or the high end (highly characteristic of the parent). The hostility scale measured hostile, angry, critical, disapproving, and/or rejecting behaviors. Antisocial behavior was defined as being resistant, defiant, and insensitive. Angry coercive behaviors included demands, hostile commands, refusals, and threats. Each variable was used as a separate indicator for the latent construct. Scores were analyzed in terms of the child's age at first assessment (when they were three to five

years old) between the years of 1997 and 2005. The scores for marital conflict were internally consistent ($\alpha = .88$) and the percent of interrater agreement was high (95%).

Harsh parenting. Observational coders assessed parenting behaviors between the target parent and their child during a videotaped puzzle task. During this task, parents were asked to let their child independently solve the puzzle on his or her own. While the child was solving the puzzle, parents were told they could help their child however deemed as necessary. The puzzle task was used to observe how parents interact with their child during a task that could produce larger amounts of difficulty for the child. The behaviors generated for harsh parenting were rated on a 9-point scale on hostility, antisocial, and angry coercion. These are the same variables that were used in the marital interaction task. Each variable was used as a separate indicator for the latent construct. Scores were analyzed in terms of the child's age at first assessment (when they were three to five years old) between the years of 1997 and 2005. The scores for harsh parenting were internally consistent ($\alpha = .93$) and the percent of interrater agreement was high (94%).

Child Mental Health. The target parent reported on their child's mental health using the Child Symptom Inventory (CSI; Gadow & Sprafkin, 1997) when their child was between six and eleven years old. Data was only analyzed the first time the child participated, between age six and eleven years old. The CSI measures common childhood psychiatric disorders and their symptoms based on DSM-IV criteria. The Parent Checklist contained 61 questions covering nine disorders. On a 4-point scale (1 = never, 2 = sometimes, 3 = often, and 4 = very often) parents were asked to identify how often the child shows each specific symptom.

The CSI provides cut off scores for clinicians for determining disorders such as emotional and behavioral disorders which include: ADHD, ODD, Conduct Disorder, GAD, Specific Phobias, Obsessive Compulsive Disorder, Posttraumatic Stress Disorder, Tic Disorder, and Depressive Disorder. For the present study, ADHD, ODD, Conduct Disorder, GAD, and Depressive Disorder were measured and each served as a separate manifest variable in the analyses. Because this study is not assessing clinical diagnoses, the mean of each disorder was used to compute the variables rather than using cut off scores.

Parents were asked to respond to 18 statements to assess ADHD. Statements included, “Fails to give close attention to details or makes careless mistakes”, “Has difficulties paying attention to tasks or play activities”, and “Is easily distracted by other things going on”. ODD was assessed by parents responding to 8 statements which included “Loses temper”, “Takes anger out on others or tries to get even”, and “Argues with adults”. In order to assess Conduct Disorder, parents responded to 15 statements, such as, “Plays hooky from school”, “Lies to get things or to avoid responsibility”, and “Has used a weapon when fighting (bat, brick, bottle, etc.)”. Parents responded to 7 statements to determine GAD. Statements included, “Is over concerned about abilities in academics, athletic or social activities”, “Acts restless or edgy”, and “Is extremely tense or unable to relax”. Depressive Disorder was assessed by 7 statements such as, “Feels that things never work out right”, “Feels worthless or guilty”, and “Has low energy level or is tired for no apparent reason”. The coefficient alpha for ADHD, Conduct Disorder, Depressive Disorder, GAD, and ODD were $\alpha = .90$, $\alpha = .82$, $\alpha = .60$, $\alpha = .76$, $\alpha = .83$, respectively.

Control variables. In order to ascertain whether the pathways of the Family Stress Model were moderated by background characteristics, parent per capita income, age for both parent and child, and gender for parent and child were used as control variables. The inclusion of the controls was not expected to influence the results. An evaluation of the models with the inclusion of the controls will enhance confidence in the robustness of the results.

Analytical plan. The present investigation will use structural equation models (SEMs) to test the pathways of the Family Stress Model. For the analyses, the first step will be to conduct descriptive statistics on all of the study variables. A minimum value, maximum value, and standard deviations will be provided. Correlations will be run in order to determine if a significant relationship exists between the latent and manifest variables. If the initial correlations are consistent with the study expectations then SEMs will be used to test the conceptual model as discussed in the present investigation section. All SEMs will be analyzed using AMOS software. Missing data from the present investigation will be handled by Full Information Maximum Likelihood (FIML; Arbuckle, 1997).

CHAPTER 4. RESULTS

Structural equation models (SEMs) were used to test the pathways of the Family Stress Model. SEMs and zero-order correlations between constructs were estimated using the AMOS software package and full information maximum likelihood (FIML) estimates (Arbuckle, 1997). FIML was used because it is highly recommended for handling missing data in longitudinal research. FIML also provides a better estimation of model parameters than other procedures (Arbuckle, 2003).

Correlational analyses. Table 2 provides the correlation coefficients between all of the constructs. Consistent with the Family Stress Model, it was found that economic pressure was significantly associated with parental emotional distress ($r = .37$, $p < .000$). Parental emotional distress was also significantly related to marital distress between the couple ($r = .17$, $p < .05$). Marital distress was associated with observed harsh parenting ($r = .26$, $p < .01$), which, in turn, was significantly related to each of the five mental health disorders examined in the present investigation. For example, harsh parenting was related to child ADHD ($r = .22$, $p < .000$), ODD ($r = .22$, $p < .01$), Conduct Disorder ($r = .40$, $p < .000$), GAD ($r = .31$, $p < .000$), and Depressive Disorder ($r = .21$, $p < .01$). True to the model, there was not a significant association between economic pressure and marital distress or between economic pressure and harsh parenting. Similarly, marital distress was not related to child mental health outcomes. Surprisingly, economic pressure was not significantly associated with child mental health. However, for Conduct Disorder and ODD, the correlations were positive and trending toward significance.

Results also showed that parental emotional distress was related to child ADHD ($r = .19$, $p < .01$), ODD ($r = .22$, $p < .01$), GAD ($r = .31$, $p < .000$), and Depressive

Disorder (r = .17, p < .05). In addition, it was found that child ODD was related to Conduct Disorder (r = .43, p < .000) and child GAD was associated with Depressive Disorder (r = .52 p < .000).

SEMs. Structural equation models (SEMs) were conducted for each of the five child mental health disorders. The SEMs were estimated in two ways. First, in order to rule out the possibility that the Family Stress Model was affected by control variables, all models were estimated by adding controls for per capita income, gender of target parent and child, as well as age of target parent and child. Next, all models were estimated to exclude these control variables. Both sets of models were essentially identical and did not change the substantive interpretations of the results. Therefore, we review the results without the inclusion of the control variables.

Specifically, SEM analyses were conducted to ascertain whether pathways within the Family Stress Model as experienced in early childhood predicted child mental health disorders during middle childhood. We begin with the model assessing child Conduct Disorder (see Figure 3). Consistent with the predicted model pathways, economic pressure was significantly and positively related to parental emotional distress (β = .37, t = 4.64). Parental emotional distress, in turn, was significantly related to both marital distress (β = .17, t = 1.88) and harsh parenting (β = .27, t = 3.45). Marital distress was significantly associated with harsh parenting (β = .22, t = 2.92) and harsh parenting was significantly related to child Conduct Disorder (β = .43, t = 5.30). The model demonstrated adequate fit, χ^2 (59) = 104.37, p < .000, RMSEA = .05, CFI = .97. Also true to the model, results demonstrated that economic pressure was not associated with either marital distress or harsh parenting. In addition, marital distress did not predict child

Conduct Disorder; rather it was indirectly related to child Conduct Disorder through harsh parenting. Results for the other four mental health disorders were all consistent with the results for child Conduct Disorder (see Table 3). The only notable difference was that emotional distress was significantly related to ADHD, Depressive Disorder, GAD, and ODD. However, even with these significant pathways, results still demonstrated that harsh parenting was significantly associated with each of the child mental health disorders.

CHAPTER 5. DISCUSSION

The present investigation examined pathways within the Family Stress Model as experienced in early childhood to five specific childhood mental disorders in middle childhood. Despite the nonsignificant association between economic pressure and child mental health, results showed support for the model in that economic pressure influenced parental emotional distress which led to an increase in observed marital distress between the couple. Marital distress, in turn, led to an increase in observed harsh parenting which was directly related to childhood mental health. The prospective longitudinal approach illustrates that economic pressure as experienced in families when children are between the ages of three and five have later developmental implications for the child during middle childhood. Understanding the effects that economic pressure has on later child development can help pave the way for policy makers and mental health professionals working with families living in economically pressured times.

This study added to the literature by introducing the impact of the Family Stress Model on specific childhood mental disorders. Although economic pressure did not directly predict child mental health, the association with Conduct Disorder and ODD was positive and in the expected direction. Previous research has shown that pathways within the model influenced both internalizing and externalizing behaviors during early adolescence (Conger et al., 1992; Neppl et al., 2009). Examining these specific mental health disorders is important as Samann (2000) discovered that children, living in economic disparity, were more likely to have mental health disorders such as conduct disorder and depression.

Results of the current study also indicated that parents living with economic pressure had higher emotional distress, which led to increased levels of harsh parenting. Indeed, Johnson (1996) found that parents of children with ADHD and ODD showed more negative parenting and fewer positive parenting strategies. Furthermore, with ADHD being diagnosed at higher rates, it is important to begin to understand potential causes. As such, it may be that harsh parenting styles, particularly those parents experiencing economic pressure might be a possible determinant. It may also be that children with mental health disorders may be more difficult to parent. Therefore, future work is needed to examine these bidirectional processes.

Another finding was the association between parental emotional distress and child, Depressive Disorder, GAD, and ODD. Consistent with the pathways within the Family Stress Model, there was an indirect relationship between parental emotional distress and child mental health through marital distress and harsh parenting. For these specific disorders, when marital distress and harsh parenting were included in the model, the association between emotional distress and child mental health was still significant. However, this is not surprising given the strong link between parental depression and adolescent depression (Reeb & Conger, 2009) as well as parental depression and child anxiety disorders (Weissman et al., 1987).

Results also showed that some of the child mental disorders were associated with one another. For example, a significant relationship was found between ODD and Conduct Disorder, as well as GAD and Depressive Disorder. This is not surprising given that ODD and Conduct Disorder both include characteristics of being aggressive or violating the basic rights of others (APA, 2000). Similarly, for GAD and Depressive

Disorder both affect daily functioning and cause negative feelings for the individual (APA, 2000). Although not part of our hypotheses, these associations were not surprising given the similarities of symptoms between these specific disorders.

Limitations and Future Directions

The present investigation is not without limitations. For example, the participants are primarily white and come from the Midwest which could limit generalizability of the findings. In addition, although the present investigation includes parent report and observational tasks, another limitation is a lack of child-reported information. Due to child age, only parents were asked to report on their child's mental health. In the future, it may be beneficial to exam child mental health from both the child's perspective as well as information gathered from the parents.

There are several other promising directions for future work. First, the current study provides results related to the negative impact of economic pressure. Future research should examine what makes families resilient to the effects of living with economic disparity. Understanding such resiliency factors may be beneficial to help decrease patterns of parental emotional distress, marital conflict, harsh parenting, and child mental health disorders. Another area of future research is examining the possible role of genetics on the individual pathways of the Family Stress Model. For example, it will be important to assess whether genetics play a stronger role in the development of mental health disorders or whether mental health disorders are strictly a result of our environment. It may be the case that both genetics and the environment play a key role in the relationship between economic pressure, parenting, and child mental health disorders.

Future research should examine both genetics and the environment as potential factors in developing such child disorders.

Future work should also consider the influence of parental mental health as related to the Family Stress Model. Indeed, it may be that families experience economic pressure due to parental mental health disorders. In other words, it may be that parental mental health disorders influence economic pressure within the family which then leads to further emotional distress, marital distress, harsh parenting, and poor child outcomes. Finally, future research should continue to examine the pathways of the Family Stress Model over time. For example, the current study examined the effects of economic pressure from early childhood through pre-adolescence. Future research should extend this model from early childhood to the adolescent years. Continuing to research children during developmentally sensitive periods may hold an important key to understanding the impact of these environmental factors on development throughout childhood.

Conclusions

In conclusion, results from the current investigation show that parents experiencing economic pressure had an increase in their own emotional distress. This emotional distress led to an increase in marital relationship problems, which in turn led to an increase in harsh parenting. Such parenting practices were associated with five separate child mental health disorders. These results help contribute to our understanding of the negative effects that living in economically difficult times has on later child development.

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IRB APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Date: 9/7/2012

To: Dr. Tricia Neppl
2358 Palmer

From: Office for Responsible Research

Title: Family Transitions Project, FTP

IRB ID: 12-060

Approval Date:	9/7/2012	**Date for Continuing Review:**	2/6/2013
Submission Type:	Modification	**Review Type:**	Expedited

The project referenced above has received approval from the Institutional Review Board (IRB) at Iowa State University according to the dates shown above. Please refer to the IRB ID number shown above in all correspondence regarding this study.

To ensure compliance with federal regulations (45 CFR 46 & 21 CFR 56), please be sure to:

- **Use only the approved study materials** in your research, **including the recruitment materials and informed consent documents that have the IRB approval stamp.**
- **Retain signed informed consent documents for 3 years after the close of the study,** when documented consent is required.
- **Obtain IRB approval prior to implementing any changes** to the study by submitting a Modification Form for Non-Exempt Research or Amendment for Personnel Changes form, as necessary.
- **Immediately inform the IRB of** (1) **all serious and/or unexpected adverse experiences** involving risks to subjects or others; and (2) **any other unanticipated problems involving risks** to subjects or others.
- **Stop all research activity if IRB approval lapses,** unless continuation is necessary to prevent harm to research participants. Research activity can resume once IRB approval is reestablished.
- **Complete a new continuing review form** at least three to four weeks prior to the **date for continuing review** as noted above to provide sufficient time for the IRB to review and approve continuation of the study. We will send a courtesy reminder as this date approaches.

Please be aware that IRB approval means that you have met the requirements of federal regulations and ISU policies governing human subjects research. **Approval from other entities may also be needed.** For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **IRB approval in no way implies or guarantees that permission from these other entities will be granted.**

Upon completion of the project, please submit a Project Closure Form to the Office for Responsible Research, 1138 Pearson Hall, to officially close the project.

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.

Assigned IRB ID: **12-060**

INSTITUTIONAL REVIEW BOARD (IRB)
Amendment for Personnel Changes

Title of Project: Family Transitions Project, FTP			
Principal Investigator (PI): Tricia Neppl			Degrees: Ph.D.
University ID: 29167966245	Phone: 4-8502	Email Address: tneppl@iastate.edu	RECEIVED

FOR STUDENT PROJECTS (*Required when the principal investigator is a student.*)			SEP 06 2012
Name of Major Professor/Supervising Faculty:			
University ID:	Phone:	Email Address: @iastate.edu	By IRB

Changes in Key Personnel:

Key personnel includes any individuals who will have contact with the participants or the participants' data (e.g., interviewers, transcribers, coders, etc.). This information is intended to inform the committee of the training and background related to the specific procedures that each person will perform on the project. For more information, please see Human Subjects - Persons Required to Obtain IRB Training. Personnel who will have contact with human blood, specimens, or other biohazardous materials must also complete Bloodborne Pathogens Training. *If the principal investigator has or will change, a complete new IRB application is required.*

List any individuals to be removed from the study staff: Megan Grummer; Renae Schurbon; Brenda Smith; Alexandria Ulrich

Complete the following table to list any new key personnel:

NAME	Interpersonal contact or communication with subjects, or access to private identifiable data?	Involved in the consent process?	Contact with human blood, specimens, or other biohazardous materials?	Other Roles in Research	Qualifications (i.e., special training, degrees, certifications, coursework, etc.)	Human Subjects Training Date
Kelsey Hortsman (Horstman)	☒	☐	☐	Undergraduate Research Assistant	HS	01/16/2012
Yuk (Erica) Pang	☒	☐	☐	Graduate Research Assistant	BS	5/15/2012
Haley Wedmore	☒	☐	☐	Graduate Student	MS	9/2008 10/4/08
Kelsey Crowder	☒	☐	☐	Graduate Student	BS	8/23/2010
Jui Dhalewadikar	☒	☐	☐	Graduate Student	MS	8/24/2011
Lisa Ryherd	☒	☐	☐	Graduate Student	MS	2/2/2009
Sarah Bicklehaupt	☒	☐	☐	Graduate Student	MS	1/30/2010
	☐	☐	☐			
	☐	☐	☐			
	☐	☐	☐			

Office for Responsible Research: 08/26/11

IRB Approval *(cont.)*

FOR IRB USE ONLY	☑ All human subjects training requirements have been met.		
IRB Reviewer Signature	Kerry A Agnitsch	*Date*	9/7/2012

TABLES AND FIGURES

Figure 1: The Family Stress Model

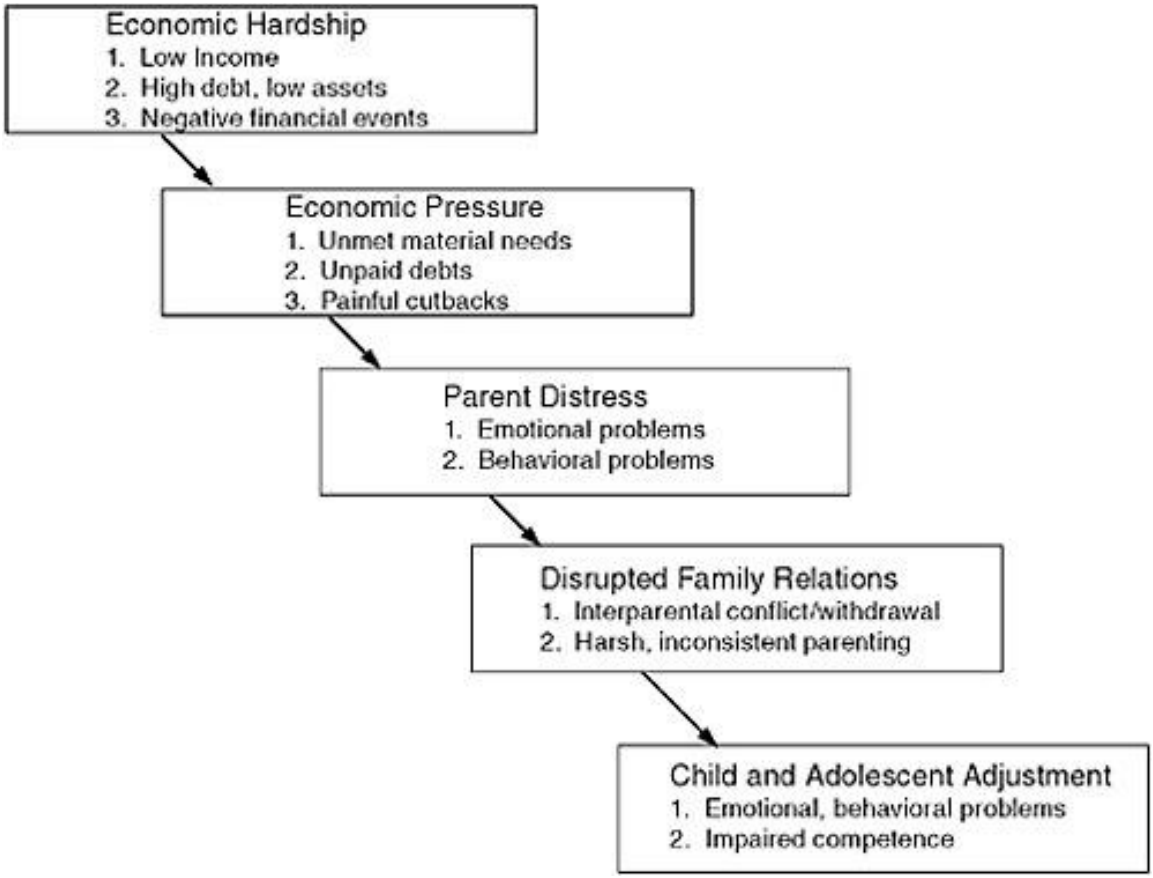

Figure 2: Conceptual Model

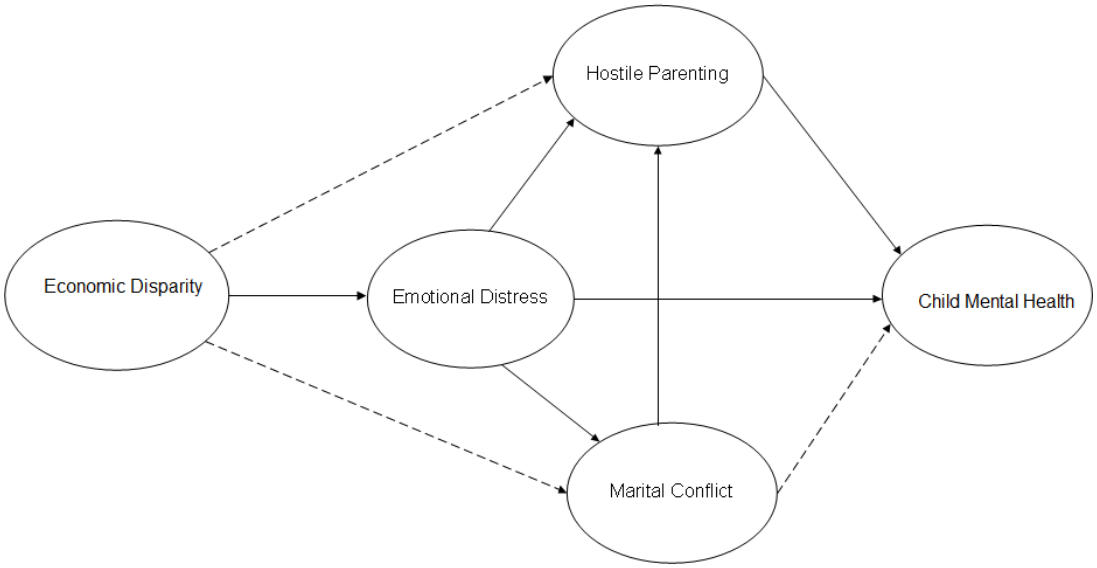

Figure 3: Analytical Model: Family Stress Model for Child Conduct Disorder

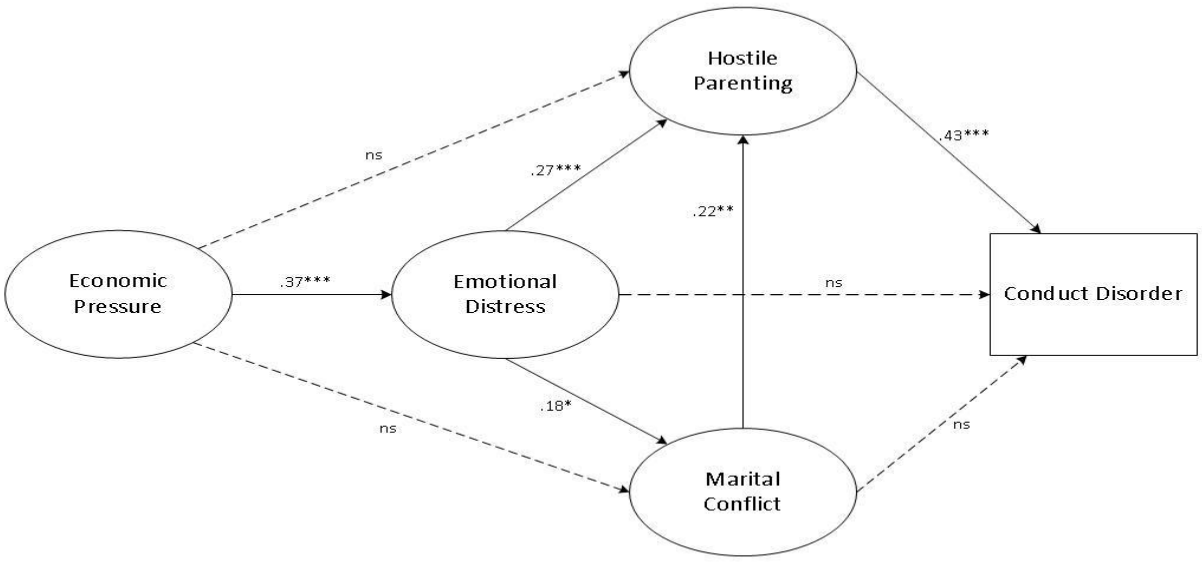

Table 1

Descriptive statistics for each study variable

Study Variables	Min.	Max.	M	SD
Economic Pressure				
Ends Meet	1.00	4.40	2.40	.852
Cut Backs	28.00	47.00	31.89	3.90
Material Needs	6.00	24.00	13.49	4.49
Emotional Distress				
Anxiety	10.00	46.00	11.50	3.77
Hostile	6.00	30.00	7.96	2.60
Depression	13.00	57.00	18.01	6.02
Marital Distress				
Hostility	1.00	9.00	4.01	2.32
Angry Coercion	1.00	9.00	2.12	1.82
Antisocial	1.00	9.00	5.17	1.99
Harsh Parenting				
Hostility	1.00	9.00	1.85	1.52
Angry Coercion	1.00	9.00	1.66	1.45
Antisocial	1.00	9.00	2.77	1.69
Child Disorders				
ADHD	1.00	3.78	1.92	.42
ODD	1.00	3.38	1.72	.41
Conduct Disorder	1.00	2.60	1.09	.19
GAD	1.00	2.71	1.29	.34
Depressive Disorder	1.00	1.86	1.12	.18

Table 2
Correlations between Variables

Study Variables	1	2	3	4	5	6	7	8	9
1. Economic Pressure									
2. Emotional Distress	.37***								
3. Marital Distress	.04	.17*							
4. Harsh Parenting	.12	.31***	.26***						
5. ADHD	.13	.19**	-.07	.27***					
6. ODD	.09	.22**	-.07	.22**	.55***				
7. Conduct Disorder	.15	.06	.05	.40***	.42***	.43***			
8. GAD	.00	.31***	-.02	.31***	.50***	.48***	.37***		
9. Depressive Disorder	-.13	.17*	.01	.21**	.32***	.51***	.36***	.52***	

Note. †p<.10. *p<.05. **p<.01. ***p<.000

Table 3

Direct Pathways between Variables of the Family Stress Model

Direct Pathways	ADHD	ODD	Conduct	GAD	Depression
Economic Pressure to Emotional Distress	.37***	.37***	.37***	.37***	.37***
Economic Pressure to Marital Distress	-.03	-.02	-.02	-.01	-.01
Economic Pressure to Harsh Parenting	.01	.01	.01	.01	.01
Economic Pressure to Disorder	.08	.01	.11	-.14	0.22*
Emotional Distress to Marital Distress	.19*	.17†	.17†	.17†	-.22†
Emotional Distress to Harsh Parenting	.27***	.27***	.27***	.27***	.27***
Emotional Distress to Disorder	.13	1.88*	-.06	.24**	.10
Marital Distress to Harsh Parenting	.22**	.22**	.22**	.22**	.22**
Marital Distress to Disorder	-.16†	-.15	-.05	-.13	-.06
Harsh Parenting to Disorder	.27**	.20*	.43***	.27***	.20*

Note. †p<.10. *p<.05. ** p<.01. ***p<.000